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1: J Biol Chem 1988 Mar 25;263(9):4323-7 Related Articles, Books, LinkOut

## Chimeric IgG-binding receptors engineered from staphylococcal protein A and streptococcal protein G.

PubMed Services

Eliasson M, Olsson A, Palmcrantz E, Wiberg K, Inganas M, Guss B, Lindberg M, Uhlen M.

Department of Biochemistry, Royal Institute of Technology, Stockholm, Sweden.

Related Resources

Chimeric Fc receptors, consisting of the IgG-binding domains of both staphylococcal protein A and streptococcal protein G, were constructed. An efficient bacterial expression system was used to produce the recombinant proteins, which vary in size and number of IgG-binding domains. The purified receptors were analyzed by immunodiffusion and a competitive enzyme-linked immunosorbent assay to establish the relative binding strength to various polyclonal and monoclonal immunoglobulins from different species. The results demonstrate that protein A and protein G have complementary binding patterns and that the chimeric receptors retain the binding capacities of both the parental constituents. This suggests that these novel chimeric receptors might be versatile reagents for immunochemical assays.

PMID 2964447 [PubMed - indexed for MEDLINE]

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L13	4607388.pn.	1	L13
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L11	5034322.pn.	1	L11
L10	5352605.pn.	1	L10
L9	5188642.pn.	1	L9
L8	5183756.pn.	1	L8
L7	4594244.pn.	1	L7
L6	5352446.pn.	1	L6

*DB=JPAB; PLUR= YES; OP= ADJ*

L5	"Guy's 13"	0	L5
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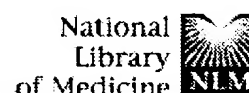
*DB=DWPI; PLUR= YES; OP= ADJ*

L3	"Guy's 13"	8	L3
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*DB=USPT; PLUR= YES; OP= ADJ*

L2	L1.clm.	1	L2
L1	"Guy's 13"	19	L1

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1: J Immunol 1989 Jan 15;142(2):575-81

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## Differential IgG-binding characteristics of staphylococcal protein A, streptococcal protein G, and a chimeric protein AG.

PubMed Services

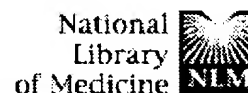
Eliasson M, Andersson R, Olsson A, Wigzell H, Uhlen M.

Department of Biochemistry, Royal Institute of Technology, Stockholm, Sweden.

Related Resources

Various Gram-positive bacteria express different types of IgG-binding receptors, each of which displaying certain unique binding properties. To evaluate specificity and avidity aspects of the differential binding pattern, a set of competitive binding assays was employed, by using staphylococcal protein A (SPA), streptococcal protein G (SPG), and a chimeric protein AG. These receptors were analyzed, in a reciprocal fashion, for binding and inhibition of binding to a selected panel of polyclonal and monoclonal Ig. Results of the study reveal that a majority of the determinants on human and bovine IgG, recognized by SPA and SPG, are either coextensive or closely overlapping. Accordingly, a minor portion of the determinants appear to be unique in the sense that a particular determinant(s) is selectively identified by one of the two receptors. Binding assays involving purified Fc fragments from human IgG, suggest that SPG shows exclusive specificity for an Fab region determinant(s) not recognized by SPA, whereas the Fc determinants for SPA and SPG are identical or overlapping. Furthermore, one of the IgG subclasses of bovine origin appears to be seen by the SPG receptor only. The competition study also demonstrates that the novel chimeric protein AG receptor shows higher or equal avidity for variants of human IgG molecules compared to the best of its parental constituents. It can thus be deduced that chimeric receptors might be useful as optimized tools for immunologic applications.

PMID: 2521350 [PubMed - indexed for MEDLINE]



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1: [Okamoto CL, Shia SP, Bird C, Mostov KE, Roth MG.](#)

Related Articles

The cytoplasmic domain of the polymeric immunoglobulin receptor contains two internalization signals that are distinct from its basolateral sorting signal.

J Biol Chem. 1992 May 15;267(14):9925-32.

PMID 1577823 [PubMed - indexed for MEDLINE]

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2: [Lin S, Naim HY, Roth MG.](#)

Related Articles

Tyrosine-dependent basolateral sorting signals are distinct from tyrosine-dependent internalization signals.

J Biol Chem. 1997 Oct 17;272(42):26300-5.

PMID 9334200 [PubMed - indexed for MEDLINE]

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3: [Okamoto CL, Song W, Bomsel M, Mostov KE.](#)

Related Articles

Rapid internalization of the polymeric immunoglobulin receptor requires phosphorylated serine 726.

J Biol Chem. 1994 Jun 3;269(22):15676-82.

PMID 8195218 [PubMed - indexed for MEDLINE]

4: [Thomas DC, Brewer CB, Roth MG.](#)

Related Articles

Vesicular stomatitis virus glycoprotein contains a dominant cytoplasmic basolateral sorting signal critically dependent upon a tyrosine.

J Biol Chem. 1993 Feb 15;268(5):3313-20.

PMID 8381425 [PubMed - indexed for MEDLINE]

5: [Breitfeld PP, Casanova JE, McKinnon WC, Mostov KE.](#)

Related Articles

Deletions in the cytoplasmic domain of the polymeric immunoglobulin receptor differentially affect endocytotic rate and postendocytotic traffic.

J Biol Chem. 1990 Aug 15;265(23):13750-7.

PMID 2380185 [PubMed - indexed for MEDLINE]

6: [Rodionov DG, Nordeng TW, Kongsvik TL, Bakke O.](#)

Related Articles

The cytoplasmic tail of CD1d contains two overlapping basolateral sorting signals.

J Biol Chem. 2000 Mar 24;275(12):8279-82.

PMID 10722655 [PubMed - indexed for MEDLINE]

- 7: [Geffen I, Fuhrer C, Leitinger B, Weiss M, Huggel K, Griffiths G, Spiess M](#) **Related Articles**

Related signals for endocytosis and basolateral sorting of the asialoglycoprotein receptor.

J Biol Chem. 1993 Oct 5;268(28):20772-7.

PMID: 8407903 [PubMed - indexed for MEDLINE]

- 8: [Reich V, Mostov K, Aroeti B](#) **Related Articles**

The basolateral sorting signal of the polymeric immunoglobulin receptor contains two functional domains.

J Cell Sci. 1996 Aug;109 ( Pt 8):2133-9.

PMID: 8856509 [PubMed - indexed for MEDLINE]

- 9: [Fuhrer C, Geffen I, Spiess M](#) **Related Articles**

Endocytosis of the ASGP receptor H1 is reduced by mutation of tyrosine-5 but still occurs via coated pits.

J Cell Biol. 1991 Aug;114(3):423-31.

PMID: 1907285 [PubMed - indexed for MEDLINE]

- 10: [Setiadi H, Disdier M, Green SA, Canfield WM, McEiver RP](#) **Related Articles**

Residues throughout the cytoplasmic domain affect the internalization efficiency of P-selectin.

J Biol Chem. 1995 Nov 10;270(45):26818-26.

PMID: 7592923 [PubMed - indexed for MEDLINE]

- 11: [Aroeti B, Mostov KE](#) **Related Articles**

Polarized sorting of the polymeric immunoglobulin receptor in the exocytotic and endocytotic pathways is controlled by the same amino acids.

EMBO J. 1994 May 15;13(10):2297-304.

PMID: 8194521 [PubMed - indexed for MEDLINE]

- 12: [Fuhrer C, Geffen I, Huggel K, Spiess M](#) **Related Articles**

The two subunits of the asialoglycoprotein receptor contain different sorting information.

J Biol Chem. 1994 Feb 4;269(5):3277-82.

PMID: 8106365 [PubMed - indexed for MEDLINE]

- 13: [Monlauzeur L, Rajasekaran A, Chao M, Rodriguez-Boulan E, Le Bivic A](#) **Related Articles**

A cytoplasmic tyrosine is essential for the basolateral localization of mutants of the human nerve growth factor receptor in Madin-Darby canine kidney cells.

J Biol Chem. 1995 May 19;270(20):12219-25.

PMID: 7744872 [PubMed - indexed for MEDLINE]

- 14: [Prill V, Lehmann L, von Figura K, Peters C](#) **Related Articles**

The cytoplasmic tail of lysosomal acid phosphatase contains overlapping but distinct signals for basolateral sorting and rapid internalization in polarized MDCK cells.

EMBO J. 1993 May;12(5):2181-93.

PMID: 8491206 [PubMed - indexed for MEDLINE]

**15:** Thomas DC, Roth MG.

Related Articles

The basolateral targeting signal in the cytoplasmic domain of glycoprotein G from vesicular stomatitis virus resembles a variety of intracellular targeting motifs related by primary sequence but having diverse targeting activities.

J Biol Chem. 1994 Jun 3;269(22):15732-9

PMID: 8195226 [PubMed - indexed for MEDLINE]

**16:** Mostov KE, de Bruyn Kops A, Deitcher DL.

Related Articles

Deletion of the cytoplasmic domain of the polymeric immunoglobulin receptor prevents basolateral localization and endocytosis.

Cell. 1986 Nov 7;47(3):359-64

PMID: 3768957 [PubMed - indexed for MEDLINE]

**17:** Odorizzi G, Trowbridge IS.

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Structural requirements for basolateral sorting of the human transferrin receptor in the biosynthetic and endocytic pathways of Madin-Darby canine kidney cells.

J Cell Biol. 1997 Jun 16;137(6):1255-64.

PMID: 9182660 [PubMed - indexed for MEDLINE]

**18:** Le Gall AH, Powell SK, Yeaman CA, Rodriguez-Boulan E.

Related Articles

The neural cell adhesion molecule expresses a tyrosine-independent basolateral sorting signal.

J Biol Chem. 1997 Feb 14;272(7):4559-67

PMID: 9020183 [PubMed - indexed for MEDLINE]

**19:** Matter K, Hunziker W, Mellman I.

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Basolateral sorting of LDL receptor in MDCK cells: the cytoplasmic domain contains two tyrosine-dependent targeting determinants.

Cell. 1992 Nov 27;71(5):741-53.

PMID: 1423629 [PubMed - indexed for MEDLINE]

**20:** Matter K, Yamamoto EM, Mellman I.

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Structural requirements and sequence motifs for polarized sorting and endocytosis of LDL and Fc receptors in MDCK cells.

J Cell Biol. 1994 Aug;126(4):991-1004.

PMID: 8051216 [PubMed - indexed for MEDLINE]

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FILE 'MEDLINE' ENTERED AT 10:47:31 ON 28 AUG 2002

L1 14 S POLYIMMUNOGLOBULIN  
L2 0 S "GUY'S 13"  
L3 411535 S ANTIBODIES

FILE 'BIOSIS' ENTERED AT 10:51:51 ON 28 AUG 2002

L4 0 S "GUY'S 13"

FILE 'CAPLUS' ENTERED AT 10:52:04 ON 28 AUG 2002

L5 0 S "GUY'S 13"

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L7 2512 S L3 AND L6  
L8 206 S RABBIT AND L7  
L9 9 S BOVINE AND L8  
E HIATT A C/AU  
L10 4 S E3  
L11 16 S E2

FILE 'BIOSIS' ENTERED AT 10:57:52 ON 28 AUG 2002

E HIATT A C/AU  
L12 8 S E3



=> d 110 1-4 all

L10 ANSWER 1 OF 4 MEDLINE  
AN 91299203 MEDLINE  
DN 91299203 PubMed ID: 2069749  
TI Monoclonal antibodies, hybridoma technology and heterologous production systems.  
AU **Hiatt A C**  
CS Scripps Clinic and Research Foundation, La Jolla, California.  
SO CURRENT OPINION IN IMMUNOLOGY, (1991 Apr) 3 (2) 229-32. Ref: 19  
Journal code: 8900118. ISSN: 0952-7915.  
CY ENGLAND: United Kingdom  
DT Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)  
LA English  
FS Priority Journals  
EM 199108  
ED Entered STN: 19910908  
Last Updated on STN: 19910908  
Entered Medline: 19910820  
CT Check Tags: Animal  
\*Antibodies, Monoclonal: IM, immunology  
Antibody Formation  
Chimera: IM, immunology  
Hybrid Cells: IM, immunology  
\*Hybridomas: IM, immunology  
Immunologic Techniques  
Immunotoxins: IM, immunology  
Metalloproteins: IM, immunology  
CN 0 (Antibodies, Monoclonal); 0 (Immunotoxins); 0 (Metalloproteins)

L10 ANSWER 2 OF 4 MEDLINE  
AN 91297781 MEDLINE  
DN 91297781 PubMed ID: 1906212  
TI Production of monoclonal antibody in plants.  
AU **Hiatt A C**  
CS Department of Molecular Biology, Research Institute of Scripps Clinic, La Jolla, California.  
SO TRANSPLANTATION PROCEEDINGS, (1991 Jun) 23 (3 Suppl 3) 147-51, discussion 151.  
Journal code: 0243532. ISSN: 0041-1345.  
CY United States  
DT Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Priority Journals  
EM 199108  
ED Entered STN: 19910901  
Last Updated on STN: 19910901  
Entered Medline: 19910809  
CT Antibodies, Monoclonal: BI, biosynthesis  
\*Antibodies, Monoclonal: GE, genetics  
Immunoglobulin G: BI, biosynthesis  
Immunoglobulin G: GE, genetics  
Immunoglobulins, kappa-Chain: BI, biosynthesis  
Immunoglobulins, kappa-Chain: GE, genetics  
Immunoglobulins, lambda-Chain: BI, biosynthesis  
Immunoglobulins, lambda-Chain: GE, genetics  
\*Plants: GE, genetics  
\*Recombinant Proteins: BI, biosynthesis  
Restriction Mapping

CN 0 (Antibodies, Monoclonal); 0 (Immunoglobulin G); 0 (Immunoglobulins, kappa-Chain); 0 (Immunoglobulins, lambda-Chain); 0 (Recombinant Proteins)

L10 ANSWER 3 OF 4 MEDLINE

AN 86162996 MEDLINE

DN 86162996 PubMed ID: 3868430

TI Genetics of polyamine synthesis in tobacco: developmental switches in the flower.

AU Malmberg R L; McIndoo J; **Hiatt A C**; Lowe B A

SO COLD SPRING HARBOR SYMPOSIA ON QUANTITATIVE BIOLOGY, (1985) 50 475-82.  
Journal code: 1256107. ISSN: 0091-7451.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 198604

ED Entered STN: 19900321

Last Updated on STN: 19900321

Entered Medline: 19860430

CT Check Tags: Support, Non-U.S. Gov't; Support, U.S. Gov't, Non-P.H.S.

Enzymes: GE, genetics

\*Genes, Structural  
Mutation

Plant Physiology

\*Plants: GE, genetics  
Plants, Toxic

\*Polyamines: BI, biosynthesis  
Species Specificity  
Tobacco: GE, genetics  
Tobacco: PH, physiology

CN 0 (Enzymes); 0 (Polyamines)

L10 ANSWER 4 OF 4 MEDLINE

AN 86111772 MEDLINE

DN 86111772 PubMed ID: 3080424

TI Regulation of polyamine biosynthesis in tobacco. Effects of inhibitors and exogenous polyamines on arginine decarboxylase, ornithine decarboxylase, and S-adenosylmethionine decarboxylase.

AU **Hiatt A C**; McIndoo J; Malmberg R L

SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1986 Jan 25) 261 (3) 1293-8.  
Journal code: 2985121R. ISSN: 0021-9258.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 198603

ED Entered STN: 19900321

Last Updated on STN: 19980206

Entered Medline: 19860303

AB Treatment of tobacco liquid suspension cultures with methylglyoxal bis(guanyldihydrazone) (MGBG) an inhibitor of S-adenosylmethionine decarboxylase, resulted in a dramatic overproduction of a 35-kDa peptide on sodium dodecyl sulfate-polyacrylamide gel electrophoresis (Malmberg, R.L., and McIndoo, J. (1983) Nature 305, 623-625). MGBG treatment also resulted in a 20-fold increase in the activity of S-adenosylmethionine decarboxylase. Purification of S-adenosylmethionine decarboxylase from MGBG-treated cultures revealed that the overproduced 35-kDa peptide and S-adenosylmethionine decarboxylase are identical. Precursor incorporation experiments using [3H] methionine and [35S]methionine revealed that MGBG does not induce any increased synthesis of S-adenosylmethionine decarboxylase but rather stabilizes the protein to proteolytic degradation. The half-life of the enzyme activity was increased when MGBG

was present in the growth medium. In addition to stabilizing S-adenosylmethionine decarboxylase, MGBG also resulted in the rapid and specific loss of arginine decarboxylase activity with little effect on ornithine decarboxylase. The kinetics of this effect suggest that arginine decarboxylase synthesis was rapidly inhibited by MGBG. Exogenously added polyamines had little effect on ornithine decarboxylase, whereas S-adenosylmethionine and arginine decarboxylase activities rapidly diminished with added spermidine or spermine. Finally, inhibition of ornithine decarboxylase was lethal to the cultures, whereas inhibition of arginine decarboxylase was only lethal during initiation of growth in suspension culture.